

ASSESSING THE ROLE OF WOMEN IN THE ECONOMIC GROWTH PROCESS WITH REFERENCE TO SAARC NATIONS

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Abstract

This study critically analyzes the pivotal role of women in driving gross domestic product (GDP) growth across South Asian Association for Regional Cooperation (SAARC) nations. Despite being considered among the fastest-growing economic regions, these South Asian nations remain far from achieving gender parity. Women remain an untapped engine of economic growth. According to a 2017 report from the Indira Gandhi Institute of Development Research (IGIDR), a single percentage-point increase in gender equity can boost growth by 20%. By synthesizing macroeconomic data and regional trends, this paper argues that narrowing the gender gap is not only a social imperative but also necessary for high-impact economic returns. The paper concludes that, for SAARC nations to achieve sustainable growth and global competitiveness, policy frameworks should shift from passive inclusion to active structural reform, addressing the systemic constraints that prevent women from participating fully in national balance sheets.

Keywords: Female Labor Force, SAARC, Economic Growth, Gender Dividend, Economic Development

JEL Classifications: J2, O1, O4

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1. Introduction

The involvement of women in the growth of the South Asian Association for Regional Cooperation (SAARC) – comprising Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka – is vital for the region's sustained development. Globally, there is a shift from focusing on 'women's development' to emphasizing 'women-led development' (Tirkey, 2022). Women drive the economy silently, and their active participation boosts growth. Despite SAARC being one of the world's fastest-growing regions, women remain an underutilized resource for economic progress. The global discourse on macroeconomics now emphasizes 'inclusive development,' with gender equality as a key priority. By 2026, the international community recognizes that achieving the UN Sustainable Development Goals, especially SDG 5 (Gender Equality) and SDG 8 (Decent Work and Economic Growth), is essential not just ethically but mathematically for sustainable GDP growth. Rahman (2019) describes the U-shaped hypothesis, where initially economic growth displaces women from traditional roles, but with rising education and declining fertility, women reintegrate into the modern workforce. In many SAARC countries, women face a 'double burden' – balancing unpaid care work and informal employment due to patriarchal systems. Data shows South Asian women spend about 6.5 times more time on unpaid domestic chores than men, the world's highest ratio. This systemic problem leads to a 'leaky pipeline,' where educational gains do not always translate into professional opportunities, limiting the potential 'gender dividend' that could drive regional prosperity.

Section 2 consists of a brief review of the literature. Section 3 provides an idea of the theoretical background of the empirical work. In section 4, an outline of the empirical model and the key variables have been specified. Section 5 discusses the panel results, and Section 6 concludes and proposes a strategic framework for the optimal utilization of the SAARC bloc's female potential.

2. Literature review

Despite advances in female literacy and financial inclusion, female labor force participation in these South Asian regions has not yet reached global averages (Aziz, Sheik, Shah, 2022; Aslan, 2022, and Mukhopadhyay, 2023). Diverse yet culturally connected, the SAARC bloc observes a paradox (Rahman, 2019): despite being the fastest-growing economic region, it exhibits the most concerning gender disparity in economic participation. According to the Global Gender Gap Report 2020, South Asia ranked 7th on the gender parity index, having closed only 66.1% of the gender gap. The World Economic Forum (2020) predicted that it would take approximately 71 years to bridge this gap and achieve the desired gender balance. According to the observations of Vanhuyse, Medgyesi, and Gal (2023), the unequal burden of unpaid domestic labor on women in South Asia acts as a "hidden tax" on female productivity. According to the McKinsey Global Institute (2018), achieving gender

parity in the workplace could add up to \$770 billion to India's GDP by 2026.

Ibourk and Elouaourti (2023) examined gender-related variables within demographic and physical capital frameworks, offering insights into how multiple growth factors interact. Similarly, Akhtar et al. (2023) argue that advancing gender equality and boosting female labor participation can significantly enhance economic growth. Evidence from country studies by Khan et al. (2021) shows that a steady rise in female labor input benefits economic growth. Research in developed countries by Sajjad et al. (2020) and Ciobanu et al. (2019) confirms that increasing female labor force participation (FLPR) substantially contributes to economic expansion. The FAO (2011) found that equal access for women to agricultural inputs increases farm yields by 20–30%, which can raise overall agricultural output in developing nations by 2.5% to 4%, helping to reduce poverty and grow rural GDP. Additionally, models from the World Bank and IMF estimate that closing the gender gap in service and professional sectors could boost GDP in developing and emerging economies by 12% to 35%. Lechman and Okonowicz (2013) again highlighted that female entrepreneurship and gender equity promote socioeconomic development. According to Tejani & Milberg (2016), as manufacturing shifts from low-tech assembly to heavy industry or automated high-tech manufacturing, female employment often drops unless women receive technical and vocational training. Without skill alignment, industrial sector growth can lead to the defeminization of manufacturing, as this study's data also confirm.

Through study indicates that key factors influencing women's contribution to economic growth include female employment rates across agriculture, industry, and services; overall female labor participation; female population size; the female working-age population; and levels of female self-employment. These employment indicators directly support economic growth by expanding the labor force, improving the use of human capital, and fostering structural change. Increased female labor force participation, especially through greater access to employment during working ages, reduces dependency ratios and raises GDP per capita. Moving female workers from low-productivity subsistence farming to capital-intensive manufacturing and high-value services enhances total factor productivity (TFP) by filling jobs based on talent rather than gender. Additionally, shifting women from informal, vulnerable self-employment to formal wage work and entrepreneurial opportunities allows them to reinvest more of their income into household health and education, ultimately creating a more skilled workforce and supporting sustainable macroeconomic growth.

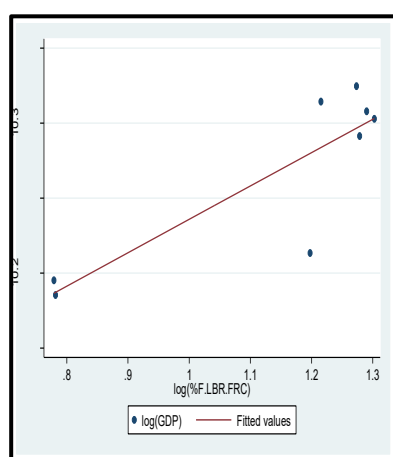
3. Data and Data Source

The World Bank extensively collects data on development indicators. Here, most of the data of the eight SAARC nations- Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka—for the span of eight years, 2017-2024 has been collected from the official World Bank site on indicators such as GDP per

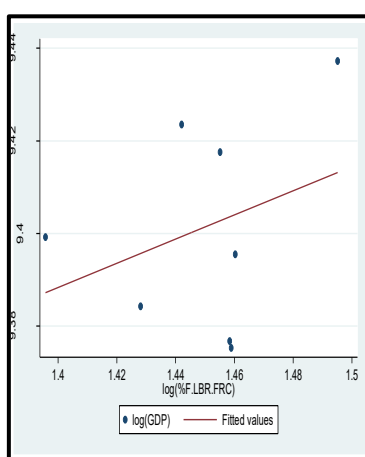
capita, female employment rate, female employment rate in agriculture sector, female employment rate in industry, female employment in service sector, male to female labor force participation, total female labor force participation, total female population, total female population in working age Group (15-64), and total female self-employed.

4. Motivation

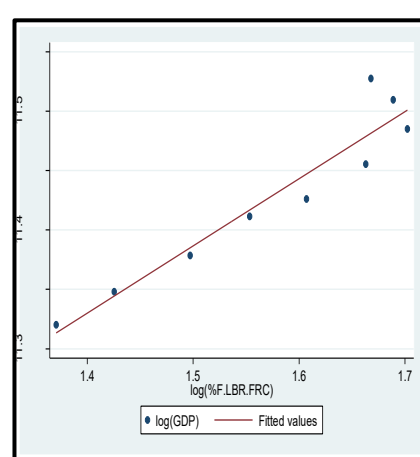
In this paper, an attempt has been made to understand the role of women in a nation's growth. To motivate the paper, a correlation analysis was conducted. The topic of women's contributions to economic growth has gained greater weight over the years, primarily because of its impact on GDP. A linear fit scatter plot of all 8 SAARC nations is given below, which clearly shows that the relationship between female labor force participation and GDP growth is positive in all of these nations, except Nepal.



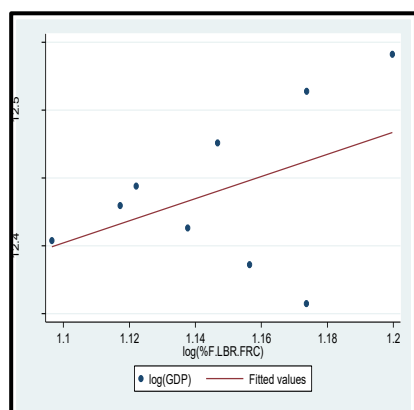
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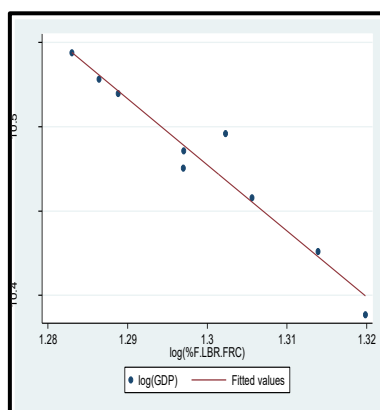
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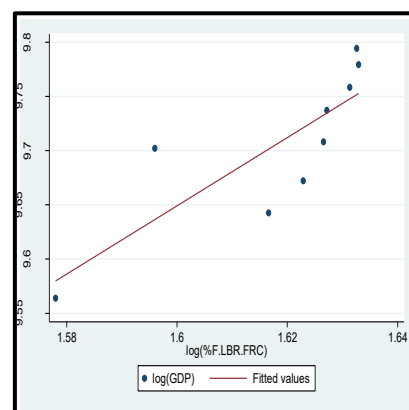
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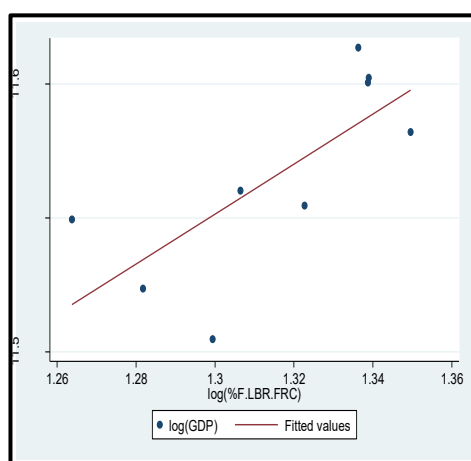
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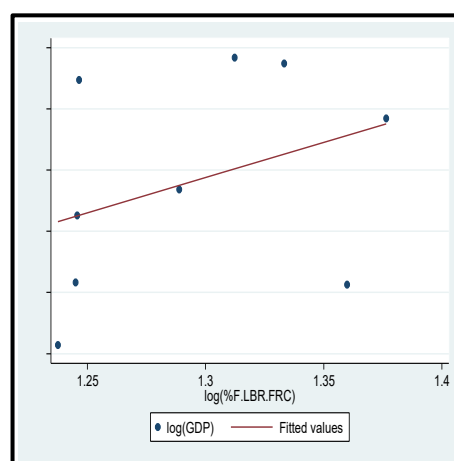
NEPAL



MALDIVES



PAKISTAN



SRI LANKA

According to Verick (2014) and Lechman & Kaur (2015), Nepal is in the initial downward phase of the U-shaped feminization hypothesis. The downward-sloping fit of Nepal may indicate that it is currently in transition from subsistence to a middle-income economy, where female workforce participation generally falls before rising again. If we closely examine the case of India, the graph shows a weak, positive correlation, though the points are widely scattered. The points in the bottom-right quadrant, showing high female labor force participation rate (**FLFPR**) but low GDP, clearly indicate India's jobless growth or women's employment in low-income, informal sectors, which do not always reflect in GDP. The difference between Nepal and India is that India is moving towards the right side of the U-curve, where urbanization, required education, and vocational skills are pulling more women into the formal sector, as shown in the chart.

It has also been observed that an increase in female labor force participation, along

with female education, has a much broader impact on the economy. The immediate effect of higher female education levels is to empower women and increase their employability, but its subtle impacts are more powerful. Employability and education provide women with decision-making rights in the family, conscious marriage decisions, reduced fertility rates, and improved healthcare for themselves and their families. The narrowing of the gender gap in employment pushes the economy towards more inclusive growth, higher household incomes, and reduced poverty, as studies show that the majority of women's income is spent on child education and on improving the family's standard of living.

The following correlation matrix, generated in Stata, provides Pearson's correlation coefficients between several log-transformed variables related to GDP, female employment across sectors, and population.

Correlation Analysis of the Factors Analyzing the Impact of Female Participation on GDP Growth

Variables	log GDP	logGDPpc	logEMP	logEMPAGRI	logEMPINDF	logEMPSERF	logFMLBRFR	logFLBRFRC~L	logFPPOP1564	logFPOP	logFSELFEM~D
logGDP	1.00										
logGDPpc	-0.26	1.00									
logEMP	-0.14	0.27	1.00								
logEMPAGRI	0.45	-0.73	-0.53	1.00							
logEMPINDF	-0.08	0.05	0.53	-0.53	1.00						
logEMPSERF	-0.30	0.72	0.36	-0.78	0.29	1.00					
logFMLBRFR	-0.32	0.60	0.09	-0.30	-0.36	0.70	1.00				
logFLBRFRC~L	-0.07	0.30	0.02	-0.01	-0.38	0.55	0.90	1.00			
logFPPOP1564	-0.13	0.74	0.31	-0.43	-0.27	0.66	0.79	0.62	1.00		

logFP OPT	0.94	- 0.57	- 0.21	0.64	-0.09	-0.50	-0.48	-0.15	-0.37	1.00	
logFSE LFEMP	0.20	0.85	- 0.50	0.81	-0.40	-0.61	-0.26	-0.02	-0.43	0.47	1.00

The table clearly shows a strong positive correlation (**0.94**) between GDP and FPOPT (total female population), indicating that total output scales closely with the size of the female population. Again, a weak negative correlation (**-0.26**) is seen between GDP and GDP per capita, a common feature of developing and less developed nations, such as the SAARC bloc. The probable reason is that population growth exceeds GDP growth, diluting average income and resulting in low per capita income. Demographic shifts, high income inequality, and growth in low-productive labor-intensive sectors can also be contributing factors.

Again, a strong negative correlation (**-0.78**) between female employment in agriculture (EMPAGRIF) and female employment in services (EMPSEVVF) is observed, highlighting the structural transformation currently underway in SAARC nations, where more females are opting for higher education and slowly leaving agriculture to join the service sector. However, the strong positive correlation between EMPSEVVF (Services) and GDPpc (**+0.72**) further confirms this.

Similarly, EMPAGRIF also has a strong negative correlation with GDPpc (**-0.73**). This is because, as per capita income rises, the share of women working in agriculture drops sharply. Conversely, EMPSEVVF and GDPpc are strongly positively correlated (**0.72**), suggesting that higher-income economies have a much higher female representation in services. A weak positive correlation (**+0.0511**) between wealth and female participation in the industrial sector further supports the view that the service sector is the engine of advancement for the SAARC bloc.

Female self-employment (FSELFEMP) is very strongly negatively correlated with GDP per capita (**-0.85**). In lower-income contexts, female "self-employment" is often vulnerable or informal. As economies develop, women tend to move from self-employment to wage-earning roles. The female labor force participation rate (FLBRFRC~L) is highly correlated with the working-age population (POP1564; **0.62**), suggesting that a larger proportion of the working-age female population participates in the labor force in this dataset.

The strong link between the working-age female population (FPOP1564) and the labor force participation rate (**0.90**) with FMLBRFR suggests that the economy's structure is successfully absorbing the female working-age population into the labor market.

However, the correlation analysis of data from 8 SAARC nations over the past 8 years clearly supports Clark Fisher's hypothesis of structural change, which states

that development will eventually lead to the majority of the labor force working in the service sector. The U-shaped labor supply curve also confirms it. As the economy moves from a primitive to a more advanced stage, women move out of agriculture (-0.73 correlation) and self-employment (-0.85 correlation). The lack of correlation between GDP per capita and Industrial employment (0.05) suggests that females of these nations are avoiding the "industrial heavy" phase and moving straight into a service-dominated structure. Eventually, education and the expansion of the service sector (correlation of +0.72) pull women back into the formal labor force. The extremely high negative correlation between GDPpc and FSELFEMP (-0.85) indicates a strong association with formalization. In low-income settings, self-employment is often informal, driven by survival. The trend here suggests that economic growth is creating sufficient institutional stability for women to transition from "own-account workers" to employees in larger service firms.

5. Empirical Model

To scale all variables to a common unit, a log-log model has been used. Here, panel data were selected, and the model was based on the Hausman test. To investigate how female-oriented socio-economic factors in SAARC nations affect GDP growth, the following panel-data model is used.

$$\begin{aligned}
 \text{Log GDP} = & \beta_0 \pm \beta_1 \text{Log GDP p.c.} \pm \beta_2 \text{Log Female Employment} \\
 & \pm \beta_3 \text{Log Female Employment Agriculture} \\
 & \pm \beta_4 \text{Log Female Employment Industry} \\
 & \pm \beta_5 \text{Log Female Employment Service} \\
 & \pm \beta_6 \text{Log} \left[\frac{\text{Female}}{\text{Male}} \right] \text{Labour Force participation} \\
 & \pm \beta_7 \text{Log Total Female Labour Force Participation} \\
 & \pm \beta_8 \text{Log Total Female Population (15 – 64)} \\
 & \pm \beta_9 \text{Log Total Female Population} \\
 & \pm \beta_{10} \text{Log Total Female self Employed} \pm \xi
 \end{aligned}$$

Here, data from 8 SAARC nations for the period of 8 years (2017-2024) has been used to analyze the impact. The Breusch-Pagan Lagrange Multiplier Test was conducted; the result was significant at the 0.01 level, suggesting that Random Effects (RE) or Fixed Effects (FE) are superior to a standard OLS Pooled Regression in this case. In handling panel data, we employ FE to control for time-invariant omitted-variable bias and RE if we assume individual-specific effects are uncorrelated with the independent variables. The Hausman test (116.84) was highly significant ($p < 0.01$), leading us to reject the null hypothesis that random effects are consistent. Therefore, the Fixed Effect (FE) Panel Regression is considered the preferred model for this data.

6. Results and Interpretation

Base Model	Fixed Effect Panel Regression		
Dependent Variable	GDP		
	Fixed Effect Panel Regression	Random Effect	OLS Pooled Regression
Explanatory Variable	Coefficients	Coefficients	Coefficients
GDPpc	0.997***	0.985***	0.985***
	0.007	0.006	0.006
EMPF	0.003	0.003	0.003
	0.003	0.002	0.002
EMPAGRIF	0.028***	-0.01**	-0.01**
	0.006	0.005	0.005
EMPINDF	0.002	-0.019	-0.019
	0.008	0.007	0.007
EMPSERFV	0.014***	0.026***	0.026***
	0.004	0.006	0.006
FMLBRFR	0.207***	0.552***	0.5524905***
	0.05	0.01	0.01
FLBRFRCOFTOTAL	-0.250***	-0.677***	-0.677***
	0.06	0.01	0.01
FPOPT1564	-0.147	-0.237***	-0.237***
	0.11	0.03	0.03
FPOPT	1.182***	1.247***	1.247***
	0.14	0.03	0.03
FSELFEMPLD	-0.032	-0.033***	-0.033***
	0.03	0.01	0.01
cons (Constant)	0.065	0.391	0.391
	0.31	0.34	0.34
Breusch and Pagan Lagrangian multiplier test for random effects			1***
Hausman Test			116.84***
Note: *p<0.1; **p<0.05; ***p<0.01			

The study reveals a strong, significant relationship between GDP and variables such as GDPpc, FMLBRFR (Ratio of Female to Male Labor Force Participation), EMPSERFV (Female Employed in Service Sector), EMPAGRIF (Female Employed in Agriculture), FPOPT (Female Population Total), and FLBRFRCOFTOTAL (Total Female Labor Force Participation). In contrast, factors such as EMPF (Total Female Employment), EMPINDF (Female Employment in Industry), FPOPT1564 (Working Age Female Population), and FSELFEMPLD (Female Self-Employment) were significant in RE or OLS but not in FE.

The strong, significant relationship between GDP and GDPpc suggests that, for the SAARC nations as a whole, population growth is relatively stable, as only stable population growth in line with total GDP can yield a direct, proportional relationship between GDPpc and GDP. However, since the inequality factor has not been taken into account, nothing can be said about the distribution of wealth in this region. The strong, positive, and significant coefficient for the female-to-male labor-

participation ratio indicates that this South Asian belt has finally begun to utilize its production possibility frontier fully. According to Hsieh et al. (2019), in their framework on "Allocation of Talent," a large share of US GDP growth over the last 50 years came simply from women and minorities moving into formal-sector professions where they had a comparative advantage, rather than being restricted to primitive "traditional" roles. This concept of Western economies is slowly imprinting its footprints in South Asia, too.

Female participation in agriculture and the service sector both has a positive and significant impact on GDP growth, whereas female industrial participation has no significant impact. This clearly indicates that female employment in agriculture and the service sector contributes positively to economic growth, whereas female contribution in industry is less impactful in the growth process. This aligns with the U-shaped female labor supply curve and traces of the Lewis Model, which show that female participation in an agro-based economy is high. As the economy advances from subsistence to industrial levels, female participation drops sharply due to a lack of proper training and defined job roles for women in the industrial sector. Further, capital accumulation and the growth of the service sector draw more women into the labor force. This transition increases value added per worker, which is the primary driver of economic growth.

The overall female population positively influences GDP growth, whereas the female labor force participation rate tends to impact negatively. This paradox is common in development economics: a larger female population contributes to a bigger workforce, increased consumption, and higher demand, all of which can drive economic growth. Conversely, higher female labor participation does not always lead to growth. During economic shifts from subsistence farming to industrialization, women often struggle to find appropriate jobs in the industrial sector, which can hinder their impact on GDP. On the other hand, women frequently enter low-productivity, informal jobs with low wages, which often do not significantly influence GDP. The observed negative relationship usually indicates women entering the workforce out of household poverty rather than through access to well-paying jobs. Offering technical and vocational training and establishing targeted employment opportunities for women could help.

Female self-employment has been examined as a factor in GDP growth studies, but its impact was found to be insignificant, suggesting that female self-employment contributes little to GDP increase. In developing countries, self-employment typically consists of small-scale farming, home-based crafts, and informal street vending. These activities are often underrepresented or poorly recorded in official statistics, making their contribution to the overall GDP largely negligible.

7. Conclusion

The role of women as an important factor in the economic growth engine is

undeniable. The significant impact of the total female population on GDP further confirms this. The positive influence of female labor participation in male-dominated sectors suggests that these South Asian economies have finally begun to realize their full potential. Still, the negative impact of female labor force participation and the almost insignificant level of self-employment confirm that most women remain engaged in unpaid care work or the low-paid informal subsistence sector. However, the positive significance of the service and agricultural sectors suggests that these sectors are the current engines of the female-led growth process. Thus, to boost growth, the governments of SAARC nations should develop additional policies and facilitate women's transition into sectors such as IT, finance, education, and healthcare. Governments can implement more digital literacy programs to help women enter the 'gig' and digital service economy, and promote more vocational training and education tailored to the service sector. Formalizing female agricultural labor through land rights, rights to agricultural subsidies, and ensuring high-value-added output can attract more women into it. Again, by incentivizing industrial firms to adopt gender-neutral hiring practices and ensuring safer working conditions, female productivity in this sector can increase. Finally, to reap the boundless scope of self-employment, the government should take effective initiatives to transform it from 'necessity-driven' to 'opportunity-driven'. The government policies must focus more on upscaling—transitioning these workers from subsistence micro-activities to formal SME entrepreneurship—through targeted access to credit, digital integration, and managerial training, so they can hire others, invest in capital, and contribute to the formal value chain.

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